Annex to Switzerland's second NDC 2031–2035: Contributions to the outcome of the first Global Stocktake

Switzerland intends to contribute to the global commitments of the first global stocktake inscribed in Decision 1/CMA.5 inter alia by the elements described below:

1) Energy transition

(a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030

The Federal Act on a Secure Electricity Supply from Renewable Energy Sources, adopted by the Swiss population by referendum on 9 June 2024, includes targets for the expansion of electricity production from renewable energies:

- Electricity production from renewable energies, excluding hydropower, is to reach at least 35,000 GWh by 2035 and at least 45,000 GWh by 2050.
- Net electricity production from hydropower must reach at least 37,900 GWh in 2035 and at least 39,200 GWh in 2050. For pumped storage power plants, only production from natural flows is counted.
- Every five years, the Federal Council will set interim targets, globally and for specific technologies. It will monitor the achievement of the targets and take measures to achieve them in good time.

The Act sets energy efficiency targets:

- The net quantity of electricity imported during the winter half-year (October 1 to March 31) must not exceed the indicative value of 5 TWh.
- In order to increase security of supply in winter, energy efficiency measures must be implemented that reduce electricity consumption by 2 TWh by 2035.
- If it becomes apparent that these efficiency gains cannot be achieved, the development of renewable energy power plants may be intensified.

The Act further sets consumption targets:

- The average energy consumption per person per year is to be reduced by 43 percent by 2035 and by 53 percent by 2050, compared with 2000 levels.
- The average electricity consumption per person per year is to be reduced by 13 percent by 2035 and by 5 percent by 2050, compared with 2000 levels.

(b) Accelerating efforts towards the phase-down of unabated coal power

No coal is mined in Switzerland. In Switzerland, coal represents 0.5 percent of total energy consumption and is used 99 percent by the cement industry and 1 percent by households. The cement industry is increasingly replacing coal with non-recyclable waste such as used tires, residual wood, etc.

(c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels, well before or by around mid-century

The Federal Council published the Swiss hydrogen roadmap by the end of 2024 which sets measures to develop markets for hydrogen and low-carbon fuels (additional information under letter e). In addition, the Swiss government funds the Re-Fuel project (funded by the SWEET program) aimed at developing robust supply paths for sustainable fuels and base chemicals for Switzerland, notably for aviation and industrial processes. To incentivize research and innovation to support the energy transition, the Swiss government has launched the programme SWEET – SWiss Energy research for the Energy Transition", to accelerate innovations that are key to implementing Switzerland's Energy Strategy 2050 and achieving the country's climate goals. The programme was launched in early 2021. The funding programme runs until 2032. A follow-up program named SWEETER must take place for the period 2025-2036.

(d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science

Switzerland understands transitioning away from fossil fuels as including both consumption and production of fossil fuels. Switzerland does not extract fossil fuels, however the last active refinery produces about 25 to 30% of its end fossil fuel consumption. In addition to setting energy efficiency and energy consumption targets, Switzerland has put in place the following strategies, plans, or policies towards reducing fossil fuel consumption, including consumption-based emissions, with a view to reduce dependence on imported fossil fuels:

- Measures in the buildings sector: The Confederation will initiate an extraordinary ten-year programme to replace fossil fuel-fired heating installations, electric resistance heating systems, hot water preparation systems, and measures to increase energy efficiency of buildings. This programme is additional to the existing Buildings Programme, which aims to support emission reductions in buildings.
- If the replacement of the heating system is accompanied by thermal insulation measures in buildings, the Confederation may provide a guarantee for these measures. The extraordinary heating system replacement program is fully financed by the Confederation up to a maximum of CHF 200 million per year. The Federal Assembly will grant a 10-year commitment credit by means of a simple federal decree.
- Support for innovation in companies: The Confederation will also support the application of innovative technologies and processes in companies. This programme is limited to 6 years (2025-2030). The Confederation will provide a maximum of CHF 1,2 billion in total (CHF 200 million per year).
- Companies that would like to apply for support must provide a net-zero roadmap that lays out a reduction path reaching net-zero emissions in 2050 the latest and including negative emission pathways.

These measures are subject to budgetary constraints and possible austerity measures.

Switzerland underlines the importance of working to sequence the transition away from fossil so as to scale up investment in clean energy and the decline in investment in fossil fuel supplies in order to avoid damaging price spikes or stranded assets, as

recommended by the IEA. At the international level, Switzerland would encourage the submission of economic diversification plans from fossil-fuel producing countries. Switzerland further supports efforts towards oil conservation. Switzerland would welcome further collaboration at the international level in that regard.

(e) Accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilization and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production

Carbon capture and storage (CCS) and Carbon dioxide removal (CDR): The Swiss government considers CCS and CDR to be essential to reach the Swiss long-term climate targets. These technologies shall be developed gradually to address hard-to-abate emissions, namely from industry, waste treatment, agriculture, and international aviation.[1] Due to currently unknown CO_2 storage capacity in Switzerland, international cooperation is crucial, e.g. with regards to CO_2-export and trading of negative emissions from technological approaches. Developing these technologies is also seen as an opportunity for the Swiss economy and academia. In this context the Swiss government actively supports early pilot projects with national and international partners[2,3,4,5]. In addition, funding for industrial-scale CCS and CDR is provided for from 2025 under the Climate and Innovation Act and the revised CO_2 Act.

Nuclear energy: Following the Fukushima nuclear accident in 2011, the Swiss Government and Parliament decided to gradually phase out nuclear energy, i.e. new plants were banned while existing plants were allowed to continue operating as long as deemed safe. To replace the share of nuclear energy, the Energy Strategy 2050, along with implementing legislation and the Energy Act, was adopted and eventually endorsed by a majority of Swiss voters. In 2024, the Federal Council has launched consultations on an amendment to the Swiss Federal Nuclear Energy Act that will allow new nuclear power plants to be licensed in Switzerland. The aim is to make Switzerland's energy policy more open to different technologies. Lifting the ban on the construction of new nuclear power plants would allow Switzerland to produce low carbon nuclear power in the future if renewable energy production is insufficient to meet the country's electricity needs.

Hydrogen: Switzerland has developed a national hydrogen strategy. The strategy shows what role hydrogen can play as an energy carrier in Swiss energy and climate policy up to 2035 and 2050. The strategy aims to create the framework conditions for the development of a hydrogen market in Switzerland so that hydrogen can contribute to achieving energy and climate targets. It is important that hydrogen is not produced from fossil fuels. Norms and standards, together with the legal framework, form the basis for the development of a hydrogen market. Hydrogen is a very volatile gas, has a different calorific value and also different properties than natural gas. Therefore, norms and standards for hydrogen must be developed along the entire value chain, from production to transport and storage to consumption, that enable environmentally friendly and safe

[1] Klimawandel: Bundesrat heisst Bericht zum Ausbau von Negativemissionstechnologien gut (admin.ch)
[2] Bilateral climate agreements (admin.ch)
[3] DemoUpCARMA – Demonstration und Upscaling von Kohlenstoffdioxid-Management-Lösungen für Netto-Null-Schweiz - Basic data (admin.ch)
[4] Klimaschutz: Bund erneuert Zusammenarbeit mit der Stiftung Klimarappen (admin.ch) ; Negative emissions technologies (klimarappen.ch)
[5] swisstopo übernimmt das Bohrloch der Nagra in Trüllikon (admin.ch)

operation. Switzerland would support opportunities to develop international standards in the field of hydrogen.

(f) Accelerating the substantial reduction of non-carbon-dioxide emissions globally, in particular methane emissions by 2030

Switzerland joined the Global Methane Pledge launched at COP26 and thus supports the global methane reduction goal of at least 30 percent below 2020 levels by 2030. While agriculture's share of fossil CO_2 emissions for Switzerland as a whole is low (barely 2 percent), agriculture is the main source of methane and nitrous oxide emissions (83 and 57 percent respectively) in Switzerland. In agriculture, these two gases are also the most important sources of GHG emissions. In its Climate Strategy for Agriculture and Food 2050[6] and accompanying measures[7], Switzerland defined concrete measures to reduce greenhouse gas emissions, including methane.

(g) Accelerating the reduction of emissions from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero- and low-emission vehicles

Switzerland has set indicative targets for the transport sector to be electrified, through 2040 by a rate of 57 percent, and until 2050 by 100 percent. A number of measures have been set in place to achieve this objective. Namely, the new CO_2 law foresees that vehicle importers and manufacturers must limit the average CO_2 emissions of their vehicles that are put on the road for the first time to a specific target value. Additional information can be found in Switzerland's Long-Term Strategy and Supplement to the NDC 2031-2035[8].

(h) Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible

Switzerland underlines the importance of the removal of fossil fuel subsidies, due to their major impact on greenhouse gas emissions. At the national level, Switzerland is actively reviewing its remaining fossil fuel subsidies. According to the Climate and Innovation Act, no floating market premiums may be claimed for plants powered partly by fossil fuels.

At the international level, Switzerland is engaged in the Friends of Fossil Fuel Subsidies Reform and a number of other initiatives that promote the removal of fossil fuel subsidies. At the World Trade Organization (WTO), Switzerland has actively supported the Agreement on Climate Change, Trade and Sustainability (ACCTS) which seeks to tackle fossil fuel subsidies. Switzerland further supports a global deadline for the elimination of fossil fuel subsidies. Switzerland would also welcome efforts to harmonize methodologies to promote transparency and tracking at the global level.

[6] Agriculture and climate strategy, available under Stratégie climat (admin.ch)
[7] Agriculture and climate strategy part II: measures, available under C:\Users\U80852567\Downloads\KSLE_2050_Teil2_F (1).pdf
[8] Available on the Long-term strategies portal of the UNFCCC website: Long-term strategies portal | UNFCCC

2) Biodiversity, nature, and forests

Switzerland intends to contribute to the global commitments inscribed in Decision 1/CMA.5 of the first global stocktake, namely in paragraph 33, 34, and 35.

On the **importance of conserving, protecting and restoring nature and ecosystems towards achieving the Paris Agreement temperature goal (paragraph 33), including through enhanced efforts towards halting and reversing deforestation and forest degradation by 2030**, and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by conserving biodiversity, while ensuring social and environmental safeguards, in line with the Kunming-Montreal Global Biodiversity Framework:

In November 2024, the Federal Council adopted the second phase (2025 - 2030) of the Swiss Biodiversity Strategy action plan. The plan aims to strengthen and complement existing policies, including sectoral policies, such as agriculture and forestry, to protect biodiversity. It also aims to contribute to achieving the objectives of the new Kunming-Montreal Global Biodiversity Framework by addressing specific targets that are otherwise insufficiently covered by national legislation. Further to measures aiming at better mainstreaming of biodiversity, specific conservation measures include, for example, the identification and enhancement of areas of particular importance to insects, the adaptation of animal and plant species and their habitats to climate change, and increased support for cantons and municipalities in promoting biodiversity in urban areas. The action also defines the typology of areas through which Switzerland intends to contribute to the global objective to ensure that, by 2030, at least 30% ("30by30") of the world's terrestrial and marine areas conserve biodiversity through the establishment of protected areas or appropriate forms of management.

On the **need for enhanced support and investment, including through financial resources, technology transfer and capacity-building, for efforts towards halting and reversing deforestation and forest degradation by 2030** in the context of sustainable development and poverty eradication (paragraph 34), in accordance with Article 5 of the Paris Agreement:

- The Swiss government currently invests over 600 million Swiss francs a year in biodiversity. A total of CHF 24 million is available to implement the Swiss Biodiversity Strategy Action Plan's measures up to 2030.
- Forest protection and conservation is anchored in the Federal Constitution of the Swiss Confederation[9] to ensure that the ecosystem fulfills its protective, commercial, and public amenity functions. This is further elaborated in the Federal Act on Forests to conserve forests in area and spatial distribution and protect them as near-natural ecosystems, particularly by prohibiting deforestation[10]. Forest management is thus subjected to strict sustainability criteria.
- At the international level, Switzerland takes part in forest-related international processes to support and advocate sustainable forest management as the central tool to safeguard forests and their ecosystem services.

[9] SR 101 - Federal Constitution of 18 April 1999 o... | Fedlex (admin.ch)
[10] SR 921.0 - Federal Act of 4 October 1991 on Fore... | Fedlex (admin.ch).

On the invitation to Parties to **preserve and restore the ocean and coastal ecosystems** and scale up, as appropriate, ocean-based mitigation action (paragraph 35):

According to the Maritime strategy of Switzerland[11], Switzerland will continue and, where necessary, strengthen its commitment in areas such as the protection of marine biodiversity, the fight against plastic pollution and climate protection. Internationally, Switzerland intends to sign the international agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) that foresees the implementation of area-based management tools including marine protected areas and is intended to be an important cornerstone to maintain functioning ocean-ecosystems, incl. their function as the main carbon sink. Further information on Switzerland's contribution can be found in the abovementioned strategy.

[11] Maritime strategy: newsd.admin.ch/newsd/message/attachments/79170.pdf

3) Sustainable lifestyles, sustainable patterns of consumption and production

On the **importance of transitioning to sustainable lifestyles and sustainable patterns of consumption and production** in efforts to address climate change, including through circular economy approaches (paragraph 36):

In a globalized economy, not only the greenhouse gases emitted in Switzerland must be recorded, but also those abroad due to Swiss final demand (the sum of household and government spending on final consumption). Due to the high share of imports in total consumption, a large part of the footprint is generated abroad. In Switzerland, consumption-based per capita emissions are high, about 2.5 to 2.7 times higher than territorial emissions per capita. A comprehensive climate policy must take this responsibility into account. In its Sustainable Development Strategy 2030, Switzerland inscribed the following objective: "Natural resources in Switzerland and abroad are not overexploited. The environmental impact of consumption and production is significantly reduced. The material ecological footprint per person is clearly declining and becoming compatible with the 1.5° C target set by the Paris Agreement".

Switzerland has succeeded in significantly reducing its domestic greenhouse gas emissions in recent years. By contrast, the greenhouse gas footprint has changed only slightly, though the current trend is declining: in 2021, the greenhouse gas footprint per capita has been reduced by almost a quarter since 2000, to 12.8 tons of CO_2 equivalents. Greenhouse gas footprint efficiency increased by around 44 percent between 2000 and 2021. This means that there has been a decoupling between the increase in prosperity and greenhouse gas emissions.

The decrease in the greenhouse gas footprint and the improvement in efficiency have different causes. On the one hand, environmental, energy and agricultural policy requirements have an influence. For example, the Swiss government has introduced a CO_2 tax on fossil fuels such as heating oil or natural gas, which has created incentives for economical consumption and for the increased use of climate-friendly energy sources. On the other hand, more resource-efficient technologies, an increasing market share of environmentally friendly goods and services, or the relocation of emission-intensive production abroad may also have had an influence.

Measures to conserve resources at home and abroad, for example through sustainable consumption, resource-efficient production processes, sustainable supply chains and approaches from the circular economy, can make a significant contribution to reducing environmental pollution abroad. They also offer Swiss companies the opportunity to apply their innovative approaches abroad. The following measures have been put in place by the Swiss government to reduce consumption-based per capita emissions:

- In the agricultural and food sector: in its Sustainable Development 2030 strategy, the Federal Council has set itself the goal of reducing the greenhouse gas footprint of food by a quarter by 2030 compared to 2020, and in the postulate report "Future Orientation of Agricultural Policy" by at least two thirds by 2050. According to Switzerland's Long-Term Strategy, the greenhouse gas footprint of food should decrease in line with the net-zero target and a further transfer of greenhouse gas emissions to other countries should be avoided.

- In Switzerland, 25 percent of the environmental impact of the food system is due to food waste (i.e. avoidable food losses). With the action plan to reduce food waste, the Federal Council wants to halve avoidable food losses by 2030 compared to 2017.
- Targets that include emissions generated upstream and downstream by third parties are further taken into account in the Climate Strategy for Agriculture and Food, in the Climate and Innovation Act, or in the Sustainable Development Strategy 2030.
- Under the Climate and Innovation Act, all companies must reduce their emissions to net zero by 2050 at the latest and are encouraged to develop roadmaps. In this context, at least direct and indirect emissions must be taken into account. The Swiss government will provide the basis, standards and professional advice for companies or industries that draw up such roadmaps by 2029.
- In the buildings sector: according to the Federal Energy Act, cantons have to set limit values for embodied energy that address material-based life-cycle emissions of buildings.
- Greater corporate responsibility: Switzerland has introduced measures set out in the action plans on corporate social responsibility and business and human rights, that are designed to encourage sustainable production in Swiss companies' global value chains. Furthermore, in 2020 the Federal Council adopted specific measures to make Switzerland a centre of sustainable finance. This specifically targets transparency, risk analyses and Switzerland's international engagement. It also enacted a statutory obligation from 2022 onwards for companies to report on sustainability.

Aside from these legislation and sectoral policies, many of the measures taken by the federal government address public-private partnerships, support for independent initiatives or foundational work such as the provision of data for lifecycle analyses. However, market failures and a lack of international coordination mean that the negative impacts of production and consumption on the environment are not sufficiently priced into the cost of goods and services. This results in the excessive use of natural resources.

For this reason, Switzerland supports increased international coordination to tackle these challenges. Switzerland plays an active part in the United Nation's Ten-Year Framework of Programmes on Sustainable Consumption and Production. It promotes the implementation of the United Nations Guiding Principles on Business and Human Rights, the OECD Guidelines for Multinational Enterprises, environmental standards, and commodities and infrastructure-related initiatives. International cooperation work is targeted in part at making food systems more sustainable, inclusive and resilient.